

Transliteration of Foreign Proper Nouns in Arabic: Graphological Proximity vs Transcription Equivalence

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Abstract

The paper tackles the dilemma of transliterating foreign proper nouns into Arabic as well as representing Arabic names in Languages of a Latin Alphabet. Our main interest is in sounds which have no counterparts in European Languages. Further, the study presents a criticism of the proposals and decisions of Arabic Language academies and some Arab linguists along with the discrepancies and shortcomings of the transliteration systems of both the Encyclopedia of Islam (The British System) and the Library of Congress (The American System). Alternative symbols are proposed to replace those currently in usage.

The Scope of the present study:

The object of this study is to present a review of the transliterational characters used in rendering names and proper nouns in both English and Arabic. Thus our concern is not with loanwords which have been borrowed as a result of the lexical interchange between Arabic and other languages. Such words have either been assimilated (i.e. naturalized in the host language(s) or may have acquired a fixed (i.e. traditional) form of transliteration. Indeed, some loanwords may lose part of their original phonetic configuration and become partially or totally unrecognizable.

Transliteration; a definition:

When the source language (SL) is written in a different script from the target language (TL), it is often necessary to provide a transliteration of the original words, rather than translation- something commonly done with the names of people, places, institutions and inventions. Here, each character of the SL is converted into a character of the TL(1).

e.g. جَمَل 'Jamal' 'camel'

With transliteration, however, there is often the problem of there being insufficient symbols in the target languages so that diacritics of symbols have to be added (in which case arbitrary choices have to be made).

e.g. عَبَّاس °Abbās

Arbitrariness, according to Crystal, is most noticeable when there is no close correspondence between the sounds of the source and target languages(2).

Thus, in the absence of an internationally agreed scheme it is very difficult to trace terms and names in international indexes unless the conversion system is known (3).

Subsequently, there is a dire need to standardize transliteration systems to avoid the problems of misunderstanding in conventions business transactions, reading maps and street names, certificates, legal documents or even a customs check-point.

Standard vs Dialectal Deviation:

It should be borne in mind that the transliterational representation of a given word depends largely on its pronunciation as uttered by native speakers. This is

particularly true of words that reflect a discrepancy between their graphological forms and actual pronunciation. A case in point is the symbol *z* [voiced palatal fricative] which is used by the authors of the Encyclopedia of Islam to stand for the Arabic *ẓ* [voiced, alveopalatal fricative]. The *z* is a dialectal [mainly Egyptian] deviation and it is closer in pronunciation to an emphatic *Z* sound. The source of confusion could either be ascribed to their recording of a deviational non-standard pronunciation as uttered by their informants, or more likely still to their desire to draw an analogy between the *s/ṣ*, *t/ṭ* and *d/ḍ* binary pattern. Our position with regard to the process of transliteration is that words should be graphologically represented while preserving their original (i.e. standard) pronunciation in the source language. Nevertheless, this golden rule is often infringed upon as a result of the modifications, namely segmental changes, a loanword is subjected to in the target language.

Segmental Proximity:

Segmental changes in loanwords can be realized in many world languages. In Greek, for example, /b/ in a loanword is replaced by /p/ since the language has no voiced bilabial plosive. Thus the word "bar" is pronounced in Greek as identical with "par". In the phonetic transcription of "bar" the Greek would use [mp] to represent the initial [b] sound in the English word (4). Likewise, English employs /kh/ to represent the final sound in شيخ 'sheikh' and the initial in خان 'khan'. The /t/, on the other hand, is substituted for the ط as in 'tambourine' which is originally borrowed from Arabic طنبور.

As a general rule, foreign sounds are often perceived in terms of the nearest phoneme of the target language. Anttila perceives that "borrowers apparently make a kind of distinctive feature analysis of the foreign sounds and assign them to the closest native bundle". (5) Likewise Hyman suggests that, "foreign sounds are perceived in terms of (the) underlying forms" (6) (of the recipient language). Holden (1972:40) however, contests both assumptions and postulates that distinctive features are only marginally significant in predicting segments which replace foreign sounds and that borrowed segments do not always correspond to either the underlying or the surface forms of the recipient language. He further adds that the phonological rules of the target language only infrequently and under very specific conditions correspond to the rule of assimilation in the borrowing process (7).

Holden's assumption holds true with respect to some cases of Arabic loanwords. As will be seen in our investigation of segmental changes in loanwords, foreign sound substitution is not always rule-governed nor phonologically justified in all cases.

Mispronunciation and Mistransliteration:

Since most words are borrowed in their written form, mistransliterations as a result of mispronunciations of vowels, diphthongs, and stress (or syllable division) are very likely the cause of many of the so-called changes in loanwords. Non-native speakers of English or French, for example, often depend on the written form of a word and its phonetic transcription shows how mistaken they are in their assumption.

Transliterating foreign loanwords gives way to more complicated problems than those of consonants. This is primarily due to the fact that European languages, which, by far, are the richest source of loanwords nowadays, reveal greater and subtler divergences with regard to this aspect of their phonological systems. A further difficulty is posed by the vowel system in Arabic, which has three diacritic marks for short vowels and three corresponding long vowels. A major hurdle in transliteration would be how to represent a large number of foreign vowels and diphthongs by using only six graphological symbols three of which (namely those standing for short vowels) are omitted in ordinary everyday practice either to avoid the exacting task of parsing and marking inflectional endings or to ease the process of typing and printing. Accordingly, the quality and length of most foreign vowels and diphthongs are determined by way of approximation. The latter process gives rise to discrepancies in the form of the transliterated word which are sometimes construed quite erroneously to phonological or morphological adaptations.

e.g. Oxygen أوكسجين instead of أكسجين

mannequin مانيكان instead of منيكن

Oxford أكسفورد instead of أكسفُرد

Orthographical Peculiarities of Arabic:

Arabic orthography, in the words of Carter (1981: 51,61), has two peculiarities: the omission of diacritics or short vowel representation in normal circumstances and the absence of capitalization (8).

(a) The Omission of Diacritics:

Case endings can be found in Semitic languages (e.g. Akkadian, Ugaritic, Classical Ethiopic and Arabic) as well as in some Italic languages such as Latin and French (e. g. the verb system). The difference, however, is that in Arabic, with the exception of the Quran and primary educational books, diacritics indicating short vowels (which also determine the grammatical function) are not part of the actual word and, hence, for the convenience of writing are often dispensed with.

Consequently, explicit instructions during the dictation of a text are often included, for without the diacritics mispronunciations are likely to become more frequent unless one understands beforehand what one is going to read (9). A case in point is the active and passive forms of many verbs which differ only in their short vowels,

e.g. أَجْبَرَ 'adjbara "compelled"

أُجْبِرَ 'udjbira "was compelled"

Similarly, only spelling instructions, conveyed through the diacritics, can help distinguish the following:

قَسَمَ 'qasam' 'oath'

قِسْمٌ 'qism' 'division'

قَسَمَ 'qassama' 'divide'

With regard to loanwords, the situation is even more perplexing, for such words may not correspond to native morphological patterns and, therefore, their pronunciation is unpredictable. In other words, there is no clue as to what particular short vowel to insert and in what position. Ali cites the example of the Arabicized form of Fr. 'television' which, in the absence of diacritics, can be pronounced in a number of ways (10): تَلْفِزْيُون tilifizyūn تَلْفِزْيُون tilfizyūn تَلْفِزْيُون talfazyūn تَلْفِزْيُون talifizyūn تَلْفِزْيُون tūlfizyūn.

The exclusion of the diacritics in writing can be attributed to a number of factors:

1. Until recently, the difficulty in incorporating the diacritics in print has always been a deterring factor. There has been the fear that the inclusion of the diacritics would require major modifications in the printing keyboard and would add redundant characters. Of course, the issue of speed and the time - consuming process of checking the exact location of each diacritic has always been the concern of writers, typists and typesetters. Nevertheless, with the introduction of Arabic - designed computer software, modern word processors and printers it has now become feasible to represent the diacritics without the least toil.

2. Vowelless endings is a tactic that is often practiced in fast speech or by speakers who do not have a sound knowledge of inflectional endings as a safeguard against the pitfalls of incorrect choice of diacritics in final position.

3. The minimization of declension in modern standard Arabic which, under the influence of translations from western languages, is becoming less synthetic and more analytic. In other words, word order and the use of particles to denote grammatical functions are gradually phasing out the need to represent inflectional diacritics. This change, however, has resulted in relatively more verbose sentences as a means of avoiding the ambiguity emanating from the absence of inflectional marks.

e.g. ضُرب الرجل 'duriba al-rajulu 'the man was beaten' becomes
تعرض الرجل للضرب ta arrada al-rajulu li al-darb 'the man was subjected to beating'

4. 'Abd al-Tawwāb holds that the exclusion of the diacritics has been encouraged by some linguists and orientalists who claim that the Quran was originally written without them (11). Kahle, for example, postulates that the Quran was compiled during the reign of ʿuthmān bin 'Affān without any diacritics. Nevertheless, with the increase in mispronunciations under the influence of tribal dialects, philologists began canonizing the readings of the Quran by inserting the diacritics (12). Others like Qutrub (d. 206 A.H.) believe that the diacritics were added later to facilitate fast speech (13). Similarly, Anis claims that Arabic can do without the diacritics, which have no phonological or syntactic function and that they were adopted simply under the influence of Latin and Greek which show case endings (14).

‘Abd al-Tawwāb refutes all these claims on the grounds that there is no evidence that the prophet may have recited the Quran without inflectional endings.(15) On the contrary, one reads in the Quran words such as غافلاً، المؤمن، إنا وجدناه صابراً نعم العبد " and صابراً " in the verse "ولا تحسبن الله غافلاً" in the verse "إنا وجدناه صابراً نعم العبد" which incorporate inflectional marks as part and parcel of their spelling instead of their neutral (vowelless) forms i.e. صابر and غافل والمؤمنون (16). Likewise, the interpretations of some Quranic verses are entirely dependant on functional analysis which, in turn, are determined by inflectional marks (17).

e.g. "إنما يخشى الله من عباده العلماء"

"Those truly fear God, among his servants, who have knowledge"

"إن الله بريء من المشركين ورسوله"

"That God and His Apostle dissolve obligations with the pagans"

"وإذ ابتلى إبراهيم ربه"

"... that Abraham was tried by his Lord"

Further, it is related that Caliph Umar bin al-Khattāb scolded a crowd for saying إنا قوم متعلمين Innā Qawmun muta‘allimīn instead of إنا قوم متعلمون Innā qawmun muta‘allimūn and that he even asked أبو موسى الأشعري Abū Mūsā Al-Ash‘arī to whip his clerk for writing من أبو موسى min Abū Mūsā instead of من أبي موسى min Abī Mūsā. (2) Finally, ‘Abd al-Tawwāb considers the presence of diacritics in other Semitic languages such as Akkadian, Ugaritic and Ethiopic as another proof that they were not introduced into Arabic at a later period. (22).

‘Abd al-Tawwāb, however, offers counter - arguments which maintain that the diacritics were a later addition in Arabic. For instance, he attributes the origin of Arabic orthography to Nabatean script that was used by the Nabateans who spoke Aramaic. In this script, only consonants were represented in writing while some (glide) consonants like the ي and the و along with the medial همزة (after being softened into an ألف as in راس instead of رأس) were used to stand for their corresponding long vowels /i:/ , / u:/ and / a:/ respectively (23). Further, ‘Abd al-Tawwāb cites examples from a version of the Quran written during the reign of المصحف العثماني and often referred to as عثمان بن عفان.

In this written version of the Quran there are words like أموال instead of أمول. كلاله instead of كلاله and أموال instead of أموال. Similarly the verbs يأتي and يدعو are written as يدع ي and يأت without any grammatical justification for dropping the final و and ي respectively. (25) Nowadays, the presence of words such as لكن and هذه respectively.

offers evidence that at one time, vowels were not part of the written form of the word. (26) But, perhaps, the strongest counter-argument against the presence of the diacritics in early Arabic script is the claim that the philologist أبو الأسود الدؤلي Abū al-Aswad al - Du'ālī (d. 688 A.D.) out of his keenness to preserve the reading and, in effect, the meanings of the Quran intact, devised the first diacritics in Arabic which were in the form of dots placed above or below the consonants. Nevertheless, the diacritics in usage nowadays (i.e. كسرة and ضمة فتحة) and the hamza were introduced by الخليل بن أحمد al-Khalil bin Aḥmad (d. 786 A.D.) (27).

(b) The Absence of Capitalization:

In a script that has no capitals it is not always easy to discern which noun is proper and which is common. The absence of capitalization is further complicated by the prefixation of prepositions or the definite article ال to proper names. Thus, for example, لانفرنس can be the transliterated form of either 'lanverness' which has no actual presence in English as a proper name, or it can be dissected into the preposition "لـ" meaning 'has' and the name of the Scottish city of 'Inverness' (27) Another equally interesting example is لندا which can be a source of confusion when it is read as 'Linda' a proper name, or ندا another proper name with the preposition لـ integrated as a prefix.

The absence of a rigid system of punctuation is perhaps another cause of such a perplexing situation. The methods used in inserting foreign names in the Arabic script are by no means consistent. At one time, the foreign word is printed in Arabic script and is used naturally like other words in the sentence. At another time, the same word is enclosed between parentheses, commas, hyphens or, if typed, in boldface. Occasionally, the loanword appears in its original form with or without its Arabic equivalent.

Proposals for Representing Foreign Sounds of Loanwords in Arabic:

While considering methods of foreign sound substitution and remodeling loanwords in accordance with Arabic morphological patterns, ancient philologists such as ابن خالويه Ibn Khālawayh, سيويه Sibawayh, ابن سيدة Ibn Sīdah الخفاجي al-Khafājī الجواليقي al-Jawālīqī and السيوطي al-Suyūfī showed little or no interest in devising new symbols or proposing ways of foreign sound representation in Arabic. Their interest, of course, was primarily directed towards replacing foreign sounds by their nearest Arabic counterparts. The only solid evidence of early

interest in foreign sound representation is the one found in the manuscripts of ابن خلدون (d. 1406 A.D.).

The bulk of interest in devising ways for transliterating loanwords while preserving their original pronunciation, shows in the works of modern Arab linguists such as أحمد عيسى Aḥmad ʿĪsá, المغربي al-Maghribī, al-Karmalī, الشهابي al-shāhabī, اليسوعي al-Yasūʿī and حسن فهمي Hasan fahmī as well as the Arabic language academies.

The Arabic language academies have been active, particularly in the late fifties and early sixties in laying the rules for transliterating Greek and Latin loanwords in Arabic. Part of their interest was in devising symbols and methods that can precisely represent the phonetic features of foreign sounds. In the following section we will assess the validity of some of the main proposals that were approved in the many sessions held for this purpose (28).

a - Consonants:

a. 1 - The introduction of new characters viz پ /P/, ژ /Z/ (and $\text{ك} \rightarrow \text{g}$ / and $\text{ف} \rightarrow \text{/v/}$: this controversial proposal has been the butt of criticism. Those who view it favorably argue that this proposal is justified both historically and linguistically on the grounds that:

a - The Arabic script was originally adopted from Aramaic. The Arabs, however, devised new characters to represent sounds such as اض , اذ , اخ , اث , اغ , اظ which were lacking in the Aramaic script (29).

b- Some languages which use the Arabic script such as Persian and Urdu devised their own symbols or modified some Arabic characters to cater for those sounds which have no representation in the Arabic alphabet such as

ط and د
ط ر
ك ز
پ ف
پ ج

c- Some prolific writers of Arabic such as البيروني al-Bayrūnī (d.1048 AD and ابن خلدون Ibn Khaldūn, (d. 1406 A. D.) for example, used special characters to represent the exact pronunciation of foreign proper nouns. ابن خلدون Ibn Khaldūn, for example, used to inscribe in his writings foreign characters and was keen to mention two of their nearest Arabic equivalents. Further, he modified the Arabic character ك to become either as a ك or a ك (the two dots represent the ق and the ج to indicate that ك is a mixture of a ق , ج and ك) in order to stand for the /g/ sound often found in names of Berber origin (30).

d- The presence of spoken sounds without orthographical representation: al-Karmaliyy remarks that ancient Arabs did not record or inscribe all the sounds they used in speech (31). In like manner, حمروش Hamarrūsh notes the presence of seven auxiliary sounds in Arabic amongst which are (32) الياء بين الياء a yā' between a yā', and a wāw /y/: a sound made with a tongue position similar to that of English /i:/ but with closely rounded lips. It can be roughly approximated to French 'u' as in 'tu'.

الألف المماله للواو /ø/ an ʾailf inclined to a wāw: a sound made with the tongue position of /e/ but with closely rounded lips, It can roughly be approximated to French 'eu' as in 'deux' and was cited in the dialects of قيس Hijāz and Banū Asad.

In his book الكتاب سيويه Sibawayh treats some sound variants of the alphabet which lack any (visual or pictorial) symbols of their own in the writing system of Arabic. (33) Some of these sound variants could be used while reciting the Quran, in poetry or speech, be it in the standard or the colloquial versions of the language.

Chief among these sounds and according to the order of arrangement in his book, سيويه Sibawayh treats the following:

1- النون الخفيفة 'light n' /n/: This is an ن which is assimilated by a following velar or uvular consonant:

e.g. إنكب [in ,kabba] 'to devote oneself to'

إنقلب [in ,qalaba] 'to topple'

الهمزة التي بين بين a 'mixed hamza' a glottal stop which is not as strongly articulated as the pure hamza (34) This can be approximated to any of the I P A schwa /ə/ or the /e/ or the French 'é' depending on the diacritic mark placed above. Though it is not made clear how it is used in speech, it is worth further investigation since it may prove to be advantageous in representing any of the foreign vowels often encountered in transliterating loanwords.

ألف تفخيم 'emphatic alif': can be approximately represented by /a:/ (35)

الشين التي كالجيم a sh like a dj /č/: the nearest approximate is the initial sound of such loanwords as:

'check' written as شيك

'chassis' written as شاصي

and the final sounds of:

'sandwich' written as ساندويش

'inch' written as إنش

It can also be found in أجدر and إجتمعوا where the ج (called جيم معطشة 'dry') is more closely related to a /c/ rather than a /d3/. The symbol often associated with this sounds is the چ wherein the three dots represent the ش embedded in a ج .

5- /z/ a šād like a záy: This sound can be categorized as an allophonic variant of the Arabic ص. To my knowledge, it can rarely if ever be encountered in loanwords in Arabic. However, the nearest sound that may bear some similarity is the /z/, a dialectal variant of the ظ, as pronounced by Egyptians and Syrians.

Furthermore, سيبوية Sibawayh includes other dialectal sounds, chief among which are:

a k between a dj and a k: when this sound is present in a loanword, it is often approximated in writing by using such letters as the ك the ج the غ and in very rare cases, the Urdu and Persian گ. By devising an appropriate symbol for this sound, the problem of transliterating such words as 'congress' (now transliterated either as كونجرس or كونجرس, and 'pragmatic' (now transliterated either as براجماتي or براجماتي) can be solved. Occasionally, the ج is used in Egypt to stand for the /g/ sound while the ج is alternatively employed to make up for the fact that the ج in Upper Egypt has the same phonetic features of the ج in standard Arabic (i.e./dj/. However, it seems that the ج was mistakenly interpreted to be the new symbol for the standard /d j/ sounds, which is different from the Cairene ج (i.e. /g/) and consequently, the new symbol چ was rejected by the Syrian Language Academy while some linguists favour the گ (36).

2- /P/ a bā like a fā: The Egyptian Language Academy adopted the Urdu symbol پ during its 30 the session (1963 - 64) (37).

However, this symbol was not officially introduced neither in textbooks nor in the Arabic press and hence was not widely disseminated.

3- ألف مالة 'inclined alif': can be symbolized as /æ:/ as in the alternative pronunciations of the alif in words like سراج /siræ:j/, وداد /widæ:d/, سيال /siyæ:l/ /?æ: lim/, هاييل /hæ:bi:l and others where the alif is either preceded or followed by the letter ي or by a consonant with the diacritic mark, the kasrah (ي). This ألف مالة /æ:/ is clear in Classical Arabic dialectal readings of the Quran where the rule of raising the frong 'alif /æ:/ is known as إمالة inclination' (38) (e.g. [ba:b] door alternatively pronounced as [bæ:b]. It may also be encountered in some standard words e.g. [tæ:b/ 'he repented' vs /ta:b/ 'he recovered' . This inclined alif (sometimes written as ي) can be handy in transliterating the IPA sound /æ/ or the French /e/ written as é.

Nevertheless, سيبويه neither provides examples of words that include such sound variations nor does he propose any new symbols or methods for representing them in writing (39).

a. 2. c, k and q are transliterated as ق (40) It seems that this practice was formulated to keep in line with ancient Arabicized loanwords wherein the interest was in giving the words an Arabic identity by means of changing the original sounds even though they may have equivalents in Arabic. Otherwise, it is a phonetically sound assumption to transliterate the /k/ → ك and in the case of modern languages the c as either a ك or a س /s/ correlative to its pronunciation. Thus we may accept أقليدس as an ancient transliteration of 'Euclides', but it would seem anomalous to transliterate 'Cadre' (F) as قادر and the relatively new loanword 'acanthus' as أقتوس (ornamental plants).

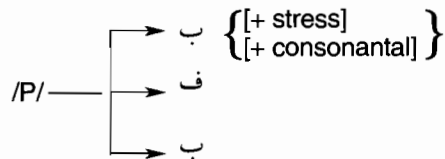
In a revised edition of its proposals, the Academy later approved a general rule stating that letters are to be transliterated according to their pronunciation.(41) Consequently, the 'q' and 'k' → ك and the 'c' either as a س or a ك depending on pronunciation with the exception of ancient Arabicized words such as قبرص 'Cyprus' مقدونيا 'Macedonia' and قليقية 'Cilicia' since such names are well established in their traditionally Arabicized forms.

a.3. The Academy initially proposed that /v/ can be rendered as و.

e.g. Valerianus → والريانوس Vaseline → وازلين Here, again, the Academy was primarily concerned with loanwords from Greek and Latin. To encompass all possibilities, الشهابي remarks that loanwords should be transliterated in accordance with the most common pronunciation at the time of borrowing. Thus, if the word vaseline is taken directly from English then the 'v' (i.e /v/) should be rendered by a ف. (42)

The Academy later passed a resolution whereby $v \rightarrow \text{ف}$. However, all loanwords with a /v/ sound that were previously transliterated with و were equally accepted. Thus, for 'vaseline', one can choose between وازلين and فازلين. However, as a general rule, we suggest that the /v/ as a phoneme and not as a graphological symbol, be transliterated as ف since Arabicization as a form of transliteration is basically a process of phonological rather than graphological equivalence.

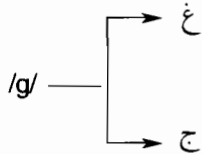
a. 4. With regard to the /P/ sound, the Academy proposed the following equivalents:



In the environment where the 'P' is in a stressed syllable or is preceded by a consonant, the Arabic equivalent will be a ب. as in ابقراط 'Hippocrates'. Otherwise, $p \rightarrow \text{ف}$ as in فوثاغورس 'Pythagoras' with the exception of loanwords that were Arabicized by ancient Arabs wherein an initial unstressed 'P' is transliterated as a ب (e.g. بنطس 'Pontos')

The Academy also proposed that $p \rightarrow \text{ب}$. Nevertheless, it seems that the new letters, namely the, پ, ژ, ف, ك, or گ (see under 5) were not widely accepted on the grounds that ancient philologists did not add any new symbols to the alphabet in order to Arabicize foreign words. Besides, the multiplicity of alphabetical symbols may prove cumbersome in the printing process.

a. 5. The Academy further proposed that /g/ can be rendered as:



Many loanwords are transliterated with a ج as the equivalent of the /g/. This has been the practice mainly in Egypt where the Cairene ج (i. e. /g/) is dominant in speech.

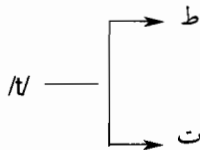
e.g. gramme $\rightarrow$ جرام (alternatively transliterated as غرام).

Glucose $\rightarrow$ جلوكوز (alternatively transliterated as غلوكوز).

congress → (alternatively transliterated as کونگرس).

The academy sanctioned both the ج as well as the غ both of which are merely an approximation. الشهابي proposes the use of the گ (or even the ك) which can be found in Persian, Urdu, and Old Turkish. (43). As we pointed out earlier, the Academy's introduction of such new letters was not widely accepted (see under a. 4).

a. 6. /t/ on the other hand, was given two alternatives:



The Academy, however, stressed that classical loanwords and proper nouns that were Arabicized with a ط are to be preserved as such.

e.g. 'Plato' أفلاطون

'Titus' طيطوس

'Malta' مالطة

Otherwise, all newly Arabicized words should be transliterated with a ت.

e.g. 'kilometer' کیلومتر

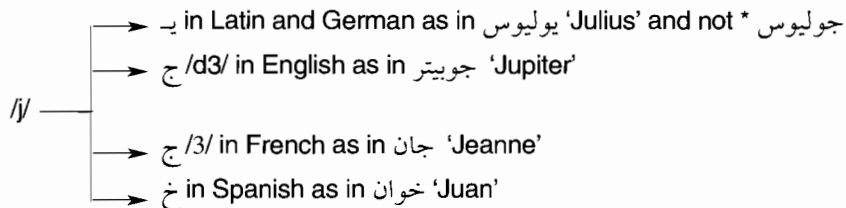
'watt' (instead of واط)

Anomalies: طبوغرافية 'topography'

'torpedo' تورييد

طن 'ton'

a. 7. The following variants were proposed for /j/

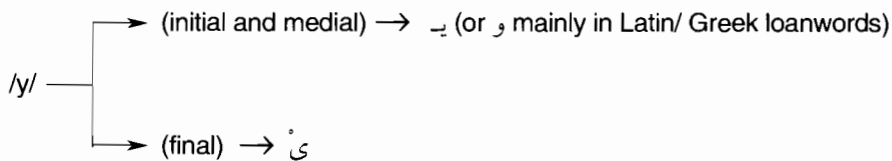


The first remark that can be made, here, regarding this particular sound is that the Academy remained indecisive throughout its deliberations and its resolution tends to be comprehensive but not quite accurate. Instead of considering the phonetic transcription as the basis for transliteration, the

Academy, it seems, was more interested in the spelling of the loanword. Secondly, the /d3/; and the /3/ were invariably given the letter ج with the labels معطشة 'dry' (i. e. affricate) and سلسه 'smooth' (i. e. fricative or continuant) (44). In an earlier proposal, the Academy suggested the introduction of ځ in order to represent the /3/ sound. Yet, the fear that the new symbol might be confused with Arabic ج prompted the Academy to use the ج instead.

The Academy's point of departure in adopting 'four' different ways for transliterating the 'j', was that a foreign proper noun should be transliterated according to pronunciation in the country of origin. (45) This in itself is a misconception. Some names may be passed on to Arabic via a medium language that may modify their original pronunciations. The modified pronunciation may gain prominence through a modern world language (e. g. English or French) and, hence becomes more common than the original pronunciation. A case in point, is the word جوبيتر 'Jupiter' (through English) though the original pronunciation according to الشهابي is to be transliterated as *يوبيتّر. (46).

a. 8. /y/ was given two forms according to position:

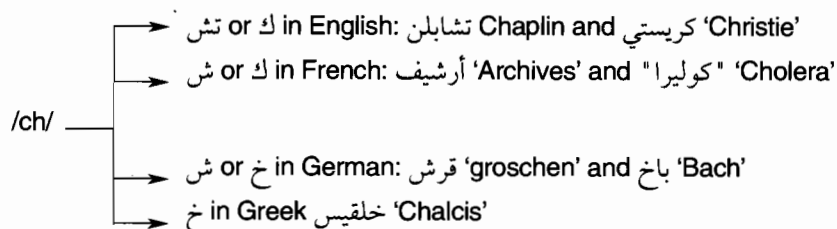


e.g. Pythagoras → **فثاغورس** (alternatively transiterated as **فوثاغورس**).

Phrygia → فریجیا (alternatively transtiterated as فروغیا).

The Academy also proposed the "و" for the 'y' in Latin and Greek words as in the above alternative transliteration and in قورينا 'Cyrene: an ancient Greek city'. As was mentioned under a. 4 and a.7, a sound phonological rule would be to disregard the graphological symbol in favor of its phonetic transcripion. Moreover, if the loanword was passed through a medium language with alterations in pronunciation then it would be worthwhile to consider which of the two pronunciations (viz the original or the modified) is more common. This, of course, involves both a diachronic and a synchronic study in the etymology and frequency of the loanword.

a. 9. the Academy proposed the following equivalents for /ch/:



The multiplicity of the proposed Arabic equivalents clearly indicates that the Academy again failed to realize the fact that, phonologically speaking, the Arabic letters represent totally different segments. Irrespective of spelling, a تش is approximately the equivalent of /tʃ/, /ʃ/, /x/ and /k/.

Further, the academy proposed the use of ج to transliterate the /tʃ/ sound (47) but this proposal was never implemented.

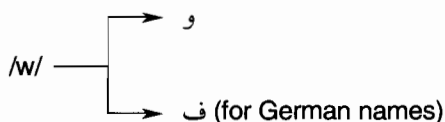
a.10. /s/ was originally transliterated as /s/ → س (with the exception of ancient loanwords transliterated otherwise).

e.g. سقراط 'Socrates'

but صقلية 'Sicile' and "إقريطش" Gretes (nowadays transliterated كريت)

This shows that the general rule is to transliterate the 's' by its equivalent the س. Despite the presence of ancient loanwords and foreign names that were transliterated with a ص as in صقلية (above), the name سقراط demonstrates that both the س and the ص were accepted by ancient Arabs. However, we suggest that the 's' in modern loanwords be preserved as a س in Arabic since there is no graphological or phonological justification for changing it into a ص in 'saloon' شاصي 'chasis' صالون.

a.11. The proposed alternatives for /w/ are as follows:



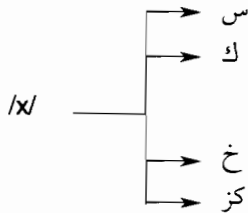
e. g. واشنطن Washington

Wagner → فاغنر but 'Wilhelm' → ولهلم (both German names)

The anomaly in transliterating 'Wilhelm' is yet another indication that

transliteration is not simply a matter of graphological equivalence. Had the Academy applied itself to phonetic transcription, the transliteration of 'w' as a ف could have collapsed into the rule concerning the 'v' (see under3).

a. 12. The Academy's approach to /x/ proved to be more versatile:



This is probably a typical example that shows how futile is any attempt in transliteration that disregards the significance of phonetics and phonology. To add to an already complex situation, we may suggest other possible transliterations of the 'x', namely the ز as in زينون 'xenon' (an atmospheric gas), the كس as in زيروكس 'Xerox' and the ك as in كوسا Xhosa (a language in southern Africa).

a.13- Silent (unpronounced) letters remain untransliterated. Thus loanwords such as فلكلور 'folklore', بورجوازية 'bourgeoise' and شيفونير 'chiffonier' are instances of mispronunciation of the original foreign words.

b - Vowels:

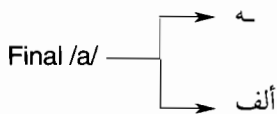
b. 1 - Initial Consonant Declustering:

As a general rule, Arabic does not allow initial consonant clusters. Hence, any such cluster in a loanword should be declusterized by prefixing إ as in 'Statius' (Roman poet) → إسقاطيوس. However, if the second consonant in the initial cluster is followed by a /u/ or /u:/ the first consonant is to be transliterated with a ضمة (ُ) without adding the إ before it as in 'Brutus' → بروتس. Nevertheless, this rule has become somewhat outdated in modern Standard Arabic wherein the flux of loanwords has made initial clusters of two consonants permissible without the need to insert any short or long vowels (48).

e.g. كروكي → 'croquis'

ترام → 'tramway'

Yet, we may still encounter words such as 'stade' (French) for 'stadium' which is transliterated either as إستاد or ستاد.



e. g.

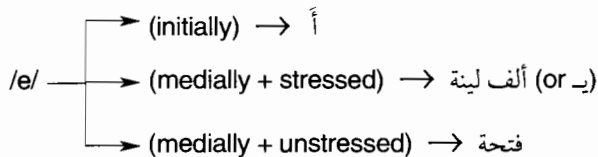
America → أمیرکا (occasionally written as أمیركة)

Nigeria → نيجيريا (rarely written as نيجيريه)

borsa (Italian) → بورصة

Though الشهابي prefers the ة for the final 'a' (49), the choice between either the أَلِف or the ة depends on the length feature of the final 'a', the ه being the character for the short version. likewise, the "ه" is usually associated with words categorized 'feminine' in grammatical gender.

b.3. According to position and stress, /e/ is transliterated as:



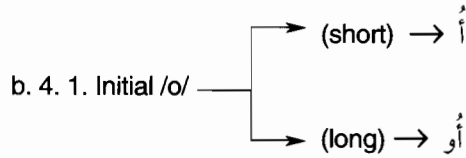
e. g. 'Euphesus' اَفْسُوس

'Menippus' مَنِیْپُوس

'Gellias' غَلِيَّاس

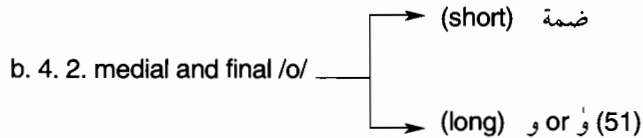
According to Collins (50), 'Euphesus' is pronounced [Efɪsðs] أْفَيْسَسْ which poses the problem of whether the transliteration of a given name or loanword should be a replica of its original pronunciation in the source language or else according to the most common pronunciation at the time of its inception into Arabic. According to the I P A pronunciation of 'e', the nearest transliteration in Arabic would be اِءْ initially and كسرة + يْ or simply يْ medially as in 'radio' → رَيْدِيُو or رَيْدِيُو (transliterated nowadays from French as راديو)

b. 4. Proposed equivalents for /o/ include initial, medial and final versions:



e. g. Oxford أكسفورد (also erroneously transliterated أوكسفورد)

Olympia → أولمبيا



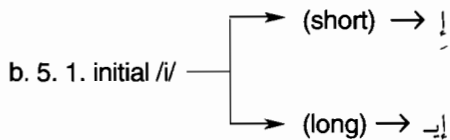
e. g. Oxford أكسفورد (also erroneously transliterated أوكسفورد)

Hugo → هوجو

Rome → روما or رومه (from italian 'Roma')

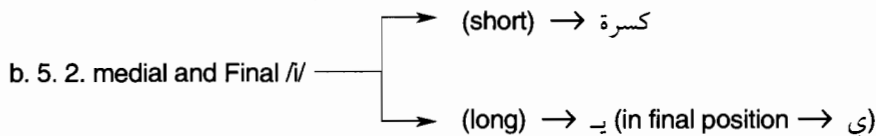
The example of 'Oxford' used twice in b. 4.1 and b. 4.2 demonstrates how the failure to transliterate the correct pronunciation of a given loanword may be misleading when the change in its Arabic pronunciation is construed as a phonological or morphological modification.

b. 5. Similar. /i/ equivalents vary according to position:



e. g.

influenza → إنفلونزا hydrogène (French for hydrogen) → إيدروجين



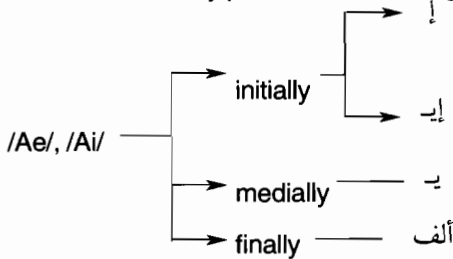
e. g. diplome (French) → دبلوم

klima (Greek for 'province') → إقليم

croquis (French) → كروكي

C - Diphthongs:

C.1. The Academy passed the following versions for /Ae/ and/ Ai/:



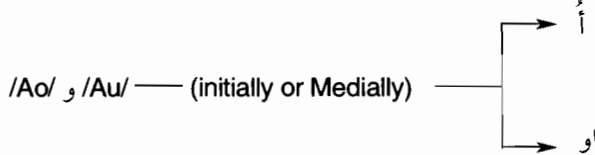
e. g. إيليانوس 'Aelianus'

إيريال 'aerial'

قِيثِيرُون 'Cithaeron'

لوقا 'Lucae' (52)

C. 2. Likewise, /Ao/and/Au/ were given two variants:



e. g. أطلولوقس 'Autolycus' مَنَلاؤس 'Menelaus' (53)

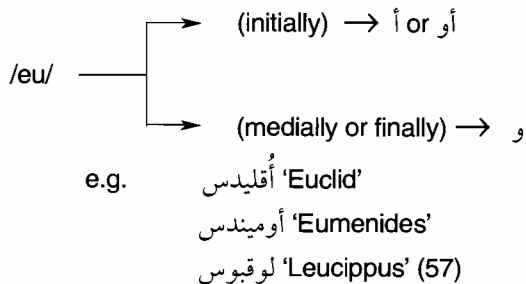
It is noteworthy that 'Menelaus' is pronounced [mEnileɪɔs] in English, a thing which demonstrates that the discrepancy between spelling and pronunciation offsets the application of some of the Academy's proposals which are mainly dependent on the written form of the loanword. Furthermore, ancient Arabs transliterated the 'ao' non-analogically, sometimes, as an ألف as in اللاذقية 'Laodicea' (55).

C. 3. /ei/ was given a diacritic counterpart:

/ei/ عِي

e. g. Seine → سِين (56)

C. 4. The Academy proposed two transliterated forms for /eu/:



The characters chosen to represent the 'eu' are very much similar to those used earlier for the 'o' (see under vowels b.4). Such a situation is bound to nullify the distinction between the 'O' and the 'eu'. Besides, 'Euclid' in English is pronounced as [ju:kliɪd] يوكليد , 'Eumenides' [ju: mnɪd i: z] يومنيديز and 'leucippus' [lu : sipəs] → لوسيس (58).

Obviously, the issue, here, is again the same one that was raised earlier under 'vowel e': should we adopt the most common pronunciation in view of the fact that Latin and Ancient Greek Literature is usually read in translation rather than in the original texts?.

5- Finally, the Arabic Language Academy in Egypt passed two other general rules. The first stipulates that the Latin spelling of a new loanword should be written next to its Arabic transliteration until the latter becomes well established. The second rule, however, is somewhat controversial; it states that ancient loanwords (and names) should be preserved intact. Similarly, modern loanwords which have well- established transliterations should remain so (59). This rule seems to gloss over the fact that some transliterations, ancient or modern, may include segmental changes that have no phonological or morphological justification. Thus for example, *دَمَقِس*: Persian *دَمسه* , *بوتقه*: Persian *پوتَه* Old French, 'estable' and Latin 'Stabulum', could have been easily rendered as *دَمَس* and *بوت* respectively.

By and large, the Academy's proposals fall short of target. The main shortcomings that make such proposals inefficient are the following:

Shortcomings

- 1 - The transliteration rules were formulated mainly to accommodate Latin and Greek loanwords in Arabic.

2 - The concept of transliteration (i. e. the rendition of the phonetic transcription of source language words by means of target language graphological symbols) seems to be blurred by the Academy's focus on the written form of the loanword (i. e. spelling).

3 - The newly-introduced characters (see 1 under consonants) remain useless in view of the fact that the Academy proposed other approximate ways of transliterating foreign sounds by means of their nearest Arabic equivalents. Further, some proposals suggest several characters for the same foreign sound (see, for example, the 'ch' and the 'x'). This is mainly due to the fact that the Academy's proposals tend to predict all the possible pronunciations of foreign characters instead of dealing with their correspondent phonemes.

4 - The number of characters proposed for diphthongs is inadequate since other frequent diphthongs such as /ai/, /au/ and /ie/ were left unexamined.

Aside from the above shortcomings, the issue of foreign sound representation has been marred by inconsistent, and sometimes contradictory proposals by individual linguists. For instance, الكرملي once proposed that foreign words ending in *et*, *é*, *e*, or *ie* should be transliterated with a final ه as in *guinée* جنيه or an ألف as in 'Idumée → أيدوما or يا as in 'Scammonée' سقمونيا. Similarly, /Ø/ in French as in the final sound of 'pardessus' can be transliterated as باردسو or باردسو (60)

The similitude between such proposals and those of the Academy only reiterate the fact that the success of any transliteration system is entirely dependent on consistency, implementation and, above all, a thorough understanding of the difference between the concepts of transliteration, transcription and Arabicization.

A Note on the Discrepancies in the transliteration systems adopted by the Encyclopedia of Islam and The library of Congress:

The systems of transliteration employed nowadays by the authors / editors of the Encyclopedia of Islam and the library of Congress (see appendix) are marred with some subtle shortcomings. To begin with, both are unidirectional, i. e. they only propose symbols for the rendition of Arabic proper nouns into English and not vice - versa. A comprehensive system should be of a binary nature in order to cater for both speakers of the S L (source language) and the T L (target language).

Further, both systems sacrifice symmetry for the sake of expediency. Thus, for example, while the underdot is used for the emphatic version of consonants (e.

g t for ت while t for ط) the symbols for the “emphatic hamza” (i.e. ع) and the ق escape this technique. Surely, the Encyclopedia of Islam was more consistent than the Library of Congress when it adopted k for ك and k for ق. Yet, the Congress system presents a good argument on the grounds that the Q, traditionally used for “Quran”, is equally available in the traditional alphabet and there is no point in devising a new symbol while an old one already exists.

Nevertheless, both systems fail to exhibit the pharyngeal nature of the ع as opposed to the ‘hamza’. The use of an apostrophe or even the symbol ʾ for the hamza and the symbol ʿ for the ع is but another example of inconsistency. This discrepancy could have been easily skirted around by using ʿ for the ‘hamza’ and an underdotted ʿ for the ع since the symbol ʿ is common to both the hamza ʾ and the ع.

Less significant, however, is the j character used by the library of Congress for ج. The Encyclopedia of Islam was more accurate in adopting the dj, since the “j” can be easily confused with its French pronunciation /ʒ/.

Likewise, while the Library of Congress uses kh for خ the Encyclopedia underlines the kh since this voiceless velar fricative is particularly difficult to non-native speakers of Arabic who often pronounce the خ as a /k/, perhaps since some believe that the h after the k is silent. Accordingly, the underlining is intended to emphasize the fricative aspect of this particular sound.

Both systems erroneously use z for ظ. While, phonetically, z is the emphatic version of z (in Arabic ز), the actual ظ sound is approximately an emphatic dh. From a dialectical perspective, the ظ is pronounced as z in Syria, Lebanon and Egypt. A standard ظ calls for a different symbol, perhaps a dotted dh or z (cf I P A 1989 revised versions) to denote an alveolo - palatal fricative.

Finally, the definite article ال should remain uniform as al- regardless of its construct state since this will facilitate indexing of names. The assimilation of ال into the subsequent consonant as in as -Samaw'al or a sh Shamsiyy could prove to be both confusing and cumbersome in indexing. On the other hand, the British version of small caps AL can be needlessly time - consuming in typing. Similarly, any prepositional or conjunctive prefixes should be separated from the definite article which need to be written independently.

e. g. bi al - Madīnah instead of * bil - Madīnah

Abū al -Layth instead of * Abu - l-Layth

NOTES

1. Crystal, D., *The Cambridge Encyclopedia of Language* Cambridge University Press, 1988, p 346.
2. Ibid.
3. Ibid.
4. Fahmī, Ḥasan H., *al-Marjīc Ta'rib al-Muṣṭalahāt*, Cairo, al-Nahḍah al-Miṣriyyah, 1961, p. 209.
5. Anttila, R., *An Introduction to Historical and Comparative Linguistics*, New York, Macmillan, 1972, p. 158.
6. Hymas, L., "The Role of Borrowing in the Justification of Phonological Grammars", in *Studies in African Linguistics I*, p. 19., quoted by Thornberg (1980), p. 52 4.
7. Holden R. T., *Loanwords and phonological systems*, Ph.D. Thesis, the university of Texas at Austin, 1972, p. 40.
8. Carter, M. G. (ed), *Studies in the History of Linguistics*, Amsterdam Studies in the theory and history of linguistic science, VOL 24, 1981, p. 51, 61.
9. Ali, Abdul Ṣāhib M., *A Linguistic study of the development of Scientific vocabulary in standard Arabic*, Kegan paul, London 1987, p. 117
10. Ibid.
11. See, for example, Karl Vollers, *Volkssprache and Schriftsprache in Alten Arabian*, Strasburg , 1906, as quoted in translation by: Abd - al- Tawwāb, Rāmdan, *Fūṣūl fī fiqh al-Lughah*, Cairo, Khafājī press, (2 nd edition) 1983, pp. 377-8.
12. Ibid.
13. al-Zadjādī Ī, °Abd - al - Raḥmān, al-Īdāḥ fī 'Ilal al-Nahw, ed. by Māzin al-Mubarak, Publisher unknown, cairo, 1959, p.70.
14. Anīs, Ibrahīm, *Min Asrār al-Lughah*, al-Andjū al-Miṣriyyah Press, Cairo 1966, pp. 202, 206 -7.
15. °Abd - al- Tawwāb, op. cit, pp. 385 -386.
16. Ibid.
17. °Abd-al-Tawwāb, op. cit, p. 394.
18. Fātir, verse 28. The translation of this and the next two verses is by A. Yusuf Ali, *The Holy Quran, Text, Translation and Commentary*, Maryland (U.S.A.) Amana Corp, 1983.
19. al-Tawba, verse 3.
20. al-Baqara, verse 124.
21. °Abd-al-Tawwāb, op. cit., p. 387, 389
22. He cites examples of inflectional endings from Hammurabi's codes of law (inscribed in old Babylonian, a branch of Akkadian) which are very similar to those found in Arabic, see p. 383.
24. Ibid.
25. Ibid.
26. °Abd-al-Tawwāb, op. cit., pp. 400-3.

27. Aziz, yowell, "Transliteration of English Proper nouns into Arabic", in META XXVIII,1.
28. For details, see *Maḍjallat - Maḍjima* al-Lughah al-ʿArabiyyah of Egypt (several issues: 4,5,10) and the most valuable reference on this subject is: al-Shahabī, Muṣṭafā, *al-Muṣṭalahāt al-ʿIlmiyyah fī al-Ighah al-ʿArabiyyah*, Damascus, al-Tarāqqī Press 1965.
29. al-Kārūrī, ʿAbd-al-Munʿin M., *al-Taʿrīb fī Dawʿ ʿIlm al-lughah al-Muʿāṣir*, Khartum, Khartoum University press, 1986, p. 165.
30. op.cit., pp. 175 -6
31. op. cit., p. 167.
32. Maḥādīr *Djalsāt Majma* al-Lughah al-Arabiyyah, 3rd session, VOL 29, p. 368.
33. Bakalla, m. H., *Arabic Culture*, Kegan Paul, London, 1984, p. 28.
34. Ibid.
35. Ibid.
36. According to al-Shahabī, the standard loanword for geology, is sometimes written as جيولوجيه in Egypt in order to represent the standard /dj/ sound in Arabic. see al-Shahabī, *al-Muṣṭalahat al-ʿIlmiyyah*, pp. 173-4.
37. op. cit., p. 167.
38. Anwar, Sami M., "Semitic has four Vowels", in Robert Channon and L. shockey (eds), *In Honor of Ilse Lehiste*, Foris Publications, Holland 1987, p. 296.
39. Though he could have made use of the reciting instructions and marks employed in the Quran. For example, the word for 'prayer' is written as الصلوة in the Quran. According to al-Mundjid (1986, p. 434), both الصلاة and الصلوة are listed as alternate spellings. Etymologically, al-Jawālīqī (al-Muarrab min al-Kalām al-Aʿjamī, dar al-Kutub al-Miṣriyyah, 1361 H., P.2/ traces its origin is Hebrew صَلּוּת It is questionable, however, whether the و in الصلوة is simply graphologically retained from the original transliteration, but phonologically void, or whether it represents with the mark a particular vowel-like a rounded ألف or an open و i.e./ oe/ as in the initial sound of French oeuf 'egg' Similarly, the mark placed above vowels indicates that the vowel has the feature of being exceptionally long.
40. The reader should be cautioned that these proposals (before being revised) were primarily concerned with Greek and Latin loanwords in Arabic; hence the anomaly.
41. al-Shahabī, op. cit., p. 168.
42. op. cit., p. 124.
43. op. cit., p. 173
44. op. cit., p. 166.
45. al-karūrī, op. cit., p. 178.
46. al-Shahabī, op. cit., p. 122.
47. *Majmūʿat al-Qarārāt al-ʿIlmiyyah li - Majma* al-Lughah al-ʿArabiyyah fī Misr, Cairo (n.d.), p. 97
48. A two consonant cluster was permissible even by ancient Arabs, see al-Shahabī, op. cit., p. 171
49. Collins English Dictionary, Glasgow, Collins Co. 1985, p. 491.

51. This particular character is used in Arabic words such as الصلاة (cf. Sībawayh/, sound variants of the alphabet note 39 above).
52. al-Shahābī, op. cit., p. 119.
53. Ibid.
54. Collins English Dictionary, op. cit., p. 921
55. al-Shahābī, op. cit., p. 119.
56. op. cit., p. 79.
57. op. cit., p. 121.
58. Collins English Dictionary, op. cit., p. 504,844.
59. al-Shahābī, op. cit., p. 127.
60. al-Karmalī, Anistās, "Qawā'id al-Ta'rib", Maḡjallat al-Mashriq. vol. 6, Beirut 1930, p. 644, 794, 835, 1028, 1077.



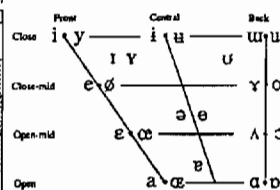
Appendices

A MIDDLE EAST STUDIES HANDBOOK

Arabic	MESA System (1983)			Selected Variations		
	Persian	Ottoman Turkish	Modern Turkish	Encyclopedia of Islam	Geschichte des arabischen Schrifttums	Encyclopaedia Iranica
ا	ʾ	ʾ	--			
ب	b	b	b or p			
پ	p	p	p			
ت	t	t	t			
ث	s	s	s	th	t	t, s
ج	j	c	c	di	g	y
چ	ch	ç	ç	ç		ç
ح	h	h	h			
خ	kh	h	h	kh	h	
د	d	d	d			
ذ	z	z	z	dh	d	d, z
ر	r	r	r			
ز	z	z	z			
ژ	zh	j	j	zh		zh
س	s	s	s			
ش	sh	ş	ş	sh	et	ş
ص	f	s	s			
ض	z	z	z			
ط	t	t	t			
ظ	z	z	z			
ع	c	c	--	c		
غ	gh	g or ğ	g or ğ	gh	ğ	ğ
ف	f	f	f			
ق	q	q	k	q		
ك	k or g	k, ğ, y, ğ	k, n, y, ğ	g		
گ	g	g	g			
ل	l	l	l			
م	m	m	m			
ن	n	n	n			
ه	h	h*	h*			
و	v or u	v	v	ou		v, w [continued]

THE INTERNATIONAL PHONETIC ALPHABET (revised to 1989)

	Bilabial	Labiodental	Dental	Alveolar	Postalveolar	Retrolabial	Palatal	Velar	Uvular	Pharyngeal	Glottal
Plosive	p b			t d		ʈ ɖ	c ɟ	k ɡ	q ɢ		ʔ
Nasal	m	ɱ		n		ɳ	ɲ	ŋ	ɴ		
Trill	ʙ			r					ʀ		
Tap or Flap				ɾ		ɽ					
Fricative	ɸ β	f v	θ ð	s z	ʃ ʒ	ɬ ɮ	ç ʝ	x ɣ	χ ʁ	ħ ʕ	h ɦ
Lateral fricative				ɬ ɮ							
Approximant		ʋ		ɹ		ɻ	j	ɰ			
Lateral approximant				l		ɭ	ʎ	ʟ			
Ejective stop	pʰ			tʰ		tʰ	cʰ	kʰ	qʰ		
Implosive	ɓ ɗ			ɗ ɗ			ɗ ɗ	ɗ ɗ	ɗ ɗ		



Symbols for rounded vowels are to the right of symbols for unrounded vowels.

OTHER SYMBOLS

- | | | | |
|---|-----------------------------------|---|---------------------------|
| V | Voiced labial-velar fricative | ◌ | Bilabial click |
| W | Voiced labial-velar approximant | ◌ | Dental click |
| ɸ | Voiced labial-palatal approximant | ◌ | (Post-)alveolar click |
| ɸ | Voiced epiglottal plosive | ◌ | Palmarvelar or click |
| H | Voiceless epiglottal fricative | ◌ | Alveolar lateral click |
| ɸ | Voiced epiglottal fricative | ◌ | Alveolar lateral flap |
| ɸ | Simultaneous ɸ and X | ◌ | Alveolo-palatal fricative |

Affricates and double articulations can be represented by two symbols joined by a ligaturetic bar if necessary.

DIACRITICS

Valued	$\bar{n} \bar{d}$	More rounded	$\bar{v}$	Labial	$\bar{t} \bar{w} \bar{d} \bar{w}$	Nasalised	$\bar{e}$
Voiced	$\bar{s} \bar{h}$	Less rounded	$\bar{v}$	Palatalised	$\bar{t} \bar{j} \bar{d}$	Nasal release	$\bar{d} \bar{n}$
h Aspirated	$\bar{t} \bar{d} \bar{h}$	Advanced	$\bar{u}$	Velarised	$\bar{t} \bar{d} \bar{v}$	Lateral release	$\bar{d} \bar{l}$
Breathily-voiced	$\bar{b} \bar{g}$	Retracted	$\bar{u}$	Pharyngealised	$\bar{t} \bar{d} \bar{t}$	No audible release	$\bar{d}$
Grasily-voiced	$\bar{b} \bar{a}$	Centralised	$\bar{e}$	Velarised or pharyngealised	$\bar{t}$		
Liquor-labial	$\bar{t} \bar{d}$	Mid-centralised	$\bar{e}$	Raised	$\bar{t}$	$\bar{t}$ = voiced alveolar fricative	
Dental	$\bar{t} \bar{d}$	+ATR	$\bar{e}$	Lowered	$\bar{e} \bar{\beta}$	$\bar{\beta}$ = voiced bilabial approximant	
Dental	$\bar{t} \bar{d}$		$\bar{e}$				
Laminal	$\bar{t} \bar{d}$	Pharycity	$\bar{e}$	Stylish	$\bar{t}$	Non-stylish	$\bar{e}$

SUPRASEGMENTALS

- | | | |
|------------------------------|-------------|------|
| Primary stress | fóto'gráfik | TONE |
| Secondary stress | | " " |
| Long ei | | " " |
| Half-long e' | | " " |
| Extra-short é | | - |
| Syllabic break | dí.ekt | |
| Minor (foot) group | | " " |
| Major (incantation) group | | " " |
| Linking (absence of a break) | | ↓ |
| Rising intonation | | ↑ |
| Falling intonation | | ↘ |

TONES

- | | | |
|----|---|------------|
| '' | } | Extra-high |
| ' | | High |
| - | | Mid |
| \ | | Low |
| '' | | Extra-low |
| ↓ | | Downstep |
| ↑ | | Upstep |

Contour tones may be symbolised by two or more tone symbols